Jameco Part number 132185

MODEL NO. AP2-5300F

RE: 132185 Specs.

1.0 Scope

2.0 Input requirements
- 2.1 Voltage
- 2.2 Frequency
- 2.3 Stead-state current
- 2.4 Inrush current

3.0 Output requirements
- 3.1 AC output
- 3.2 DC load requirements
- 3.3 Regulation and protection
- 3.4 Ripple and noise
  - 3.4.1 Specification
  - 3.4.2 Ripple voltage test circuit
- 3.5 Overshoot
- 3.6 Efficiency

4.0 Protection
- 4.1 Input
- 4.2 Output
  - 4.2.1 OPP
  - 4.2.2 OVP
  - 4.2.3 Short current

5.0 Power supply sequencing
- 5.1 Turn on
- 5.2 Hold up time
- 5.3 Power off sequence

6.0 Signal requirements
- 6.1 Power good (POR)
- 6.2 Under voltage sense level

7.0 Environment
- 7.1 Operation
- 7.2 Insulation resistance
- 7.3 Dielectric withstanding voltage
- 7.4 Leakage current

8.0 Safety
- 8.1 UL & UL+C
- 8.2 TUV
- 8.3 CB

Jameco Part number 132185

9.0 Reliability
    9.1 Burn in

10.0 Mechanical requirements
    10.1 Physical dimension
    10.2 AC inlet
    10.3 AC outlet

Jameco Part number 132185

1.0 Scope

This specification defines the performance characteristics of a grounded , single-phase , 300 watts , 5 output level power supply. This specification also defines world wide safety requirements and manufacturers process test requirements.

2.0 Input requirements

2.1 Voltage (sinusoidal)

Low range	90 ~ 132 VAC	Normal	100 ~ 125 VAC
High range	180 ~ 260 VAC	Normal	200 ~ 240 VAC

2.2 Frequency

The input frequency range will be 47hz~63hz.

2.3 Steady-state current

7/3.5 amps maximum (excluding AC output current) at any low/high range input voltage.

2.4 Inrush current

40/80 amps @110/220 VAC (at 25 degrees ambient cold start)

3.0 Output requirements

3.1 AC output requirements

One AC output shall be provided which must meet the following requirements:

Low range	90-132 VAC	Max output current	2.0amp
High range	180-260 VAC	Max output current	1.0amp

3.2 DC load requirements

Normal	Load current		Regulation tolerance	
Output voltage	Max.	Min.	Max.	Min.
+5V	16-30	3.0	+5%	-5%
+12V	10	0.5	+5%	-5%
-5V	1	0.0	+10%	-16%
-12V	1	0.0	+10%	-10%
+3.3V	7.28	1.0	+5%	-5%

*** +5V and +3.3V total output max:175W ***

*** +3.3V output voltage manufacturer set at 3.45V ***

3.3 Regulation and protection

Output DC Voltage	Line Regulation	Load regulation	Cross regulation
+5V	± 50mV	± 250mV	± 200mV
-5V	± 50mV	± 600mV	± 400mV
+12V	± 50mV	± 300mV	± 250mV
-12V	± 50mV	± 950mV	± 700mV
+3.3V	± 50mV	± 150mV	± 100mV

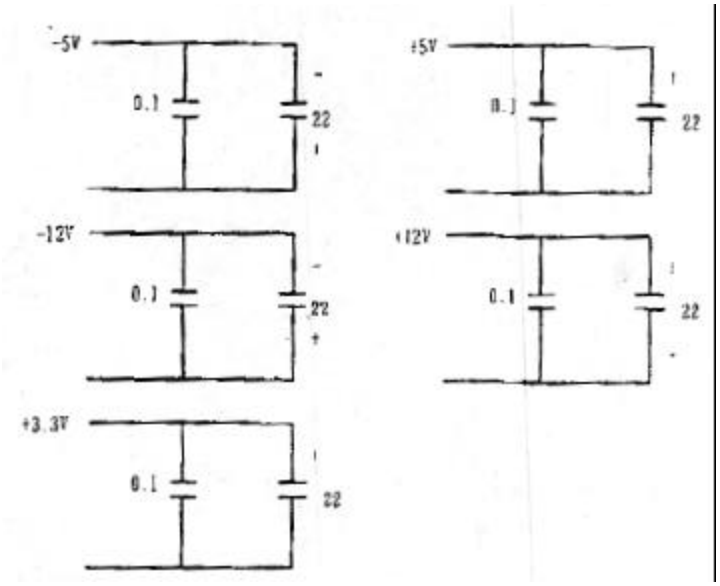
Jameco Part number 132185

3.4 Ripple and noise

3.4.1 Specification

+5V	60mV (P-P)
+12V	120mV (P-P)
-5V	150mV (P-P)
-12V	250mV (P-P)
+3.3V	50mV (P-P)

3.4.2 Ripple voltage test circuit



0.1 uf is ceramic the other is tantalum.

3.5 Overshoot
Any overshoot at turn on or turn off shall be less 15% of the nominal voltage value, all output shall be within the regulation limit of section 3.2 before issuing the power good signal of section 6.0.

3.6 Efficiency
Power supply efficiency typical 60% at 115V, full load. Power factor can not below 0.6

4.0 Protection

4.1 Input (primary)
The input power line must have an over power protection device in accordance with safety requirement of section 8.0

4.2 Output (secondary)

4.2.1 Over power protection
Over power protection at 110%~150% of rated output power. The power supply latches all DC output into a shutdown state. Over power of this type shall cause no damage to power supply , after over power is removed and a power on/off cycle is initiated , the power supply will restart.

4.2.2 Over voltage protection
If an over voltage fault occurs (internal of the power supply) , the power supply will latch all DC output into a shutdown state before
+5V : 5.5V ~ 7.0V
+3.3V : 4.0V ~ 5.0V

4.2.3 Short circuit
A short circuit placed on any DC output to DC return shall cause no damage and power supply latch.

5.0 Power supply sequencing

5.1 Power on (see fig. 1)
5.2 Hold up time
When power shutdown DC output 5V must be maintain 16msec in regulation limit at normal input voltage.
5.3 Power off sequence (see fig. 1)

6.0 Signal requirements
6.1 Power good signal (see fig. 1)
The power supply shall provide a "power good" signal to reset system logic , indicate proper operation of the power supply , and give advance warning of impending loss of regulation at turn off. This signal shall be a TTL compatible up level (2.4V to 5.25V) when +5V output voltage are present and above the minimum UV sense levels specified in paragraph 6.2 , or a down level (0.0V to 0.8V) when any output is below its minimum UV sense level.

At power on , the power good signal shall have a turn on delay of at least 100ms but not greater than 500ms after the output voltages have reached their respective minimum sense levels.

6.2 Under voltage (UV) sense levels

Output	Minimum sense voltage
+5V	+4.50V
+3.3V	+2.50V

7.0 Environment

7.1 Operation
Temperature 0 to 50 degrees centigrade
(Evaluated for UL recognition at an operating temperature of 25°C ambient)

7.2 Insulation resistance
Primary to secondary : 20 meg. ohm min. 500 VDC
Primary to PG : 20 meg. ohm min. 500 VDC

7.3 Dielectric withstanding voltage
Primary to secondary : 1500 VAC for 60 sec.
Primary to PG : 1500 VAC for 60 sec.

7.4 Leakage current
3.5 mA. max. at nominal voltage 250 VAC

8.0 Safety

8.1 Recognized to U.S. and Canadian requirements under the component recognition program of Underwriters Laboratories Inc.

8.2 TUV approval
The power supply shall be designed to meet TUV EN-60950.

8.3 CB approval
The power supply designed to meet IEC 950.

9.0 Reliability

9.1 Burn in
All products shipped to customer must be burn in. The burn in shall be performed at high line voltage.

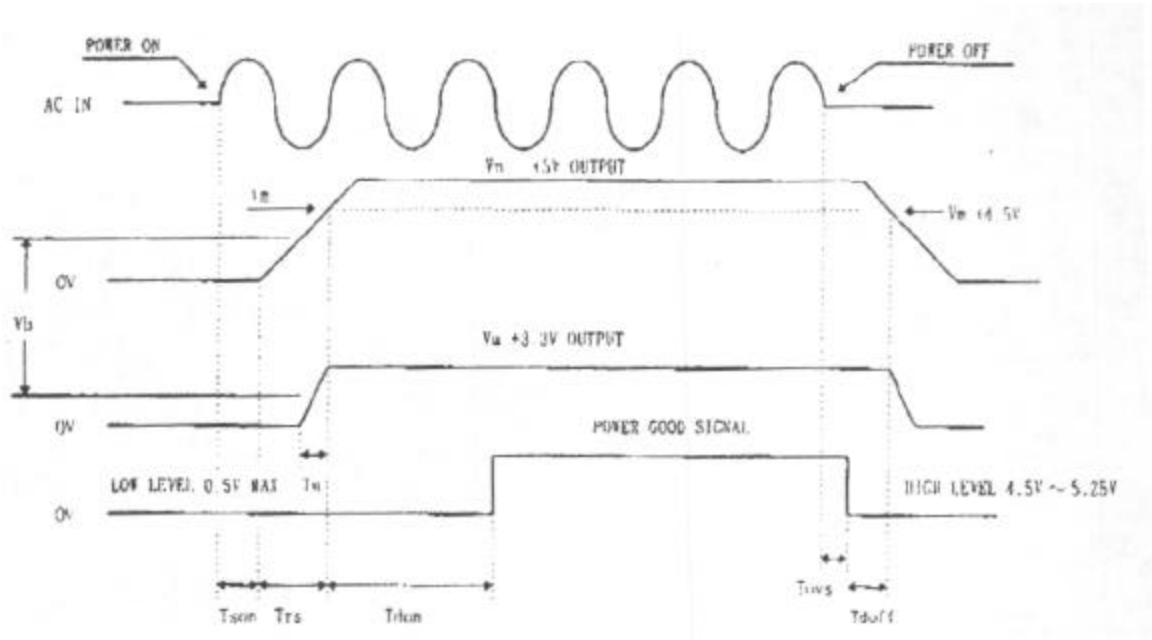
10.0 Mechanical requirements

10.1 Physical dimension : 150 mm * 140 mm * 86 mm

10.2 Connector power input (DELTA 10GEEG3E) or equivalent.

10.3 Connector ac output (RONG FENG SS-8B) or equivalent.

Jameco Part number 132185



Vn	Nominal voltages +5V
Vm	Minimum voltages +4.5V
Va	Nominal voltages +3.3V
Vb	+2.0V max
Tson	Switch on time (500 ms. max.)
Trs	+5V rise time (100ms. max.)
Tdon	Delay turn-on (100ms. < Tdon < 500ms.)
Tdoff	Delay turn-off (1 ms. min.)
Toff	Hold up time (16ms. min.)
Tm	Delay time of +3.3V (1ms. min)

<Figure 1>